

reporting gauges adhered to furniture to record consumers reactions to TV advertisement. In the laboratory setting, embodiments of the present invention may enable a rapid modification of measurement systems to perfect experimental procedures. In the field, because of the capability to place devices
5 employing the present invention in operation quickly, and because placement is so flexible (i.e., the devices may be adhered to almost any object), experiments may be done rapidly and modified quickly.

It will be appreciated that modifications and variations of these examples are covered by the teachings provided and are within the purview of the
10 appended claims.

What is claimed is:

- 15 1. An apparatus comprising:
a first layer comprising a non-conductive adhesive region and a conductive adhesive region;
a second layer coupled to the first layer, the second layer comprising an electronic component, wherein the electronic component is in
20 electrical connection to the conductive adhesive region in the first layer so that the conductive adhesive region provides a contact point for the electronic component; and
a third layer coupled to the second layer, the third layer comprising an adhesive to couple the apparatus to an object.
25
2. The apparatus of claim 1, wherein the apparatus further comprises a forth layer coupled to the third layer to substantially cover the third layer, the forth layer being releasably removable from the third layer.
- 30 3. The apparatus of claim 1, wherein the thickness measured from the first layer to the third layer is less than 1.5 millimeters.

4. The apparatus of claim 1, wherein the apparatus has a flex radius of .1 inches.

5 5. The apparatus of claim 1, wherein the component in the second layer is one of a plurality of types, and wherein the first layer comprises a plurality of conductive adhesive regions arranged in a geometric pattern that corresponds to the component type of the component in the second layer.

10 6. The apparatus of claim 1, wherein the second layer further comprises a substrate.

7. The apparatus of claim 1, wherein the apparatus further comprises a conductive non-adhesive region to provide an additional contact point for the
15 electronic component.

8. A system comprising a plurality of modules, wherein each module comprises a component layer and an adhesive layer, wherein each component layer comprises an electronic component, wherein each adhesive layer
20 comprises a non-conductive adhesive region and a conductive adhesive region, wherein the electronic component in each module is in electrical connection with the conductive adhesive region in that module, and wherein the adhesive layer in a first module of the plurality of modules is coupled the adhesive layer in a second of the plurality of modules so that the conductive adhesive region in the
25 first module is coupled to the conductive adhesive region in the second module to create an electrical path between the electronic component in the first module and the electronic component in the second module.

9. The system of claim 8, wherein each component layer further comprises a
30 flexible substrate.

10. The system of claim 9, wherein if the system is adhered to an object the system thickness measured from the object to the farthest part of the system from that object is less than .5 millimeters.

5 11. The system of claim 10, wherein the system has a flex radius of .1 inches.

12. The system of claim 11, wherein one of said modules is a central processing unit module, one of said modules is a power module, and one of said modules is a sensor.

10

13. A method of constructing a circuit, the method comprising:

remove a releasable cover from a first module, wherein removing the cover exposes at least part of an adhesive layer of the first module, wherein the adhesive layer contains regions of conductive and non-conductive material, and wherein the first module contains a first electronic component;

15

remove a releasable cover from a second module, wherein removing the cover exposes at least part of an adhesive layer of the second module, wherein the adhesive layer contains regions of conductive and non-conductive material, and wherein the second module contains a second

20

electronic component; and

adhering the second module to the first module, wherein adhering includes connecting conductive regions in the adhesive layer of the first module with conductive regions in the adhesive layer of the second module to form an electrical connection between the electronic component in the first module and the electronic component in the second module.

25

30

14. The method of claim 13, wherein the first module further comprises an additional conductive region, and wherein the method further comprises:

coupling contacts to the additional conductive region in the first module, wherein the contacts are coupled to a computer device;

5 downloading programming information from the computer device to the electronic component in the first module; and

uncoupling the contacts from the first module.

15. The method of claim 13, wherein method further comprises:

10 removing only a portion of a releasable cover from a third module, wherein removing the portion of the cover exposes a portion of an adhesive layer of the third module, wherein the adhesive layer contains regions of conductive and non-conductive material, and wherein the third module contains a third electronic component; and

15 adhering the exposed portion of the adhesive layer of the third module to the adhesive layer of the first module, wherein adhering includes connecting conductive regions in the adhesive layer of the third module to conductive regions in the adhesive layer of the first module to form an electrical connection between the electronic component in the third module and the
20 electronic component in the first module.

16. The method of claim 13, wherein the removing and adhering are performed by an automated manufacturing device.

25

30

17. A method of processing data related to an object, wherein the method comprises:

removing a releasable cover from a device to expose at least part of an adhesive layer, wherein the device comprises an electronic component;

5 coupling the device to an object using the adhesive layer; and
 processing data in the electronic component, wherein the data is related to the object or related to the environment the object is in.

18. The method of claim 17, wherein coupling the device includes flexing the
10 device to conform to shape of the object.

19. The method of claim 18, wherein the device has a thickness of less than .5 millimeters.

15 20. The method of claim 17, wherein processing data comprises:
 sensing data in a sensor module of the device; and
 transmitting the data using an interface in the device.